WHAT IS CLAIMED IS:

1. A process for producing polybutylene terephthalate, comprising: continuously subjecting terephthalic acid and 1,4-butanediol to esterification reaction in the presence of a titanium compound catalyst using one-stage or plural-stage esterification reaction vessels, and then subjecting the resultant reaction product to polycondensation reaction, said process satisfying the following requirements (A) to (C):

(A) a pressure (P) in at least one of said esterification reaction vessels being in the range of 20 to 90 kPa;

(B) a concentration of the titanium compound catalyst used in the esterification reaction being not more than 90 ppm, calculated as a concentration (α) by weight of titanium atom, based on the weight of the polybutylene terephthalate finally produced; and

(C) the following formulae (I) and (II) being satisfied:

$$\beta = BM/TM - 0.03 \times \alpha + 0.045 \times P \qquad (I)$$

$$\beta = 4.0 \text{ to } 7.0 \qquad (II)$$

wherein TM is the number of moles of terephthalic acid supplied to the esterification reaction vessels per unit time; BM is the number of moles of whole 1,4-butanediol supplied to the esterification reaction vessels per unit

time; α is a concentration (unit: ppm) of the titanium catalyst used in the esterification reaction (calculated a concentration by weight of titanium atom based on the finally produced PBT); and P is a pressure (unit: kPa) in at least one of the esterification reaction vessels.

2. A process according to claim 1, wherein the pressure (P) in at least one of the esterification reaction vessels is not more than 75 kPa.

3. A process according to claim 1, wherein BM/TM represented by the formula (I) is not less than 3.1.

4. A process according to claim 1, wherein β in the formula (I) is in the range of 5.0 to 6.0.

5. A process according to claim 1, wherein the concentration (α) by weight of titanium atom is not more than 50 ppm.

6. A process according to claim 1, wherein the pressure (P) in the respective esterification reaction vessels is in the range of 50 to 70 kPa.

7. A process according to claim 1, wherein said polybutylene terephthalate has a solution haze of not more than 3% as measured by dissolving 2.7 g of the polybutylene terephthalate in 20 mL of a mixed solvent containing phenol and tetrachloroethane at a weight ratio of 3:2.

8. A process according to claim 1, wherein in the step in which terephthalic acid and 1,4-butanediol is continuously esterified with each other in the presence of the titanium compound catalyst in the esterification reaction vessels while supplying a part of the 1,4-butanediol to the esterification reaction vessels independently of the terephthalic acid, not less than 10% by weight of the titanium compound catalyst used in the esterification reaction is directly supplied to a liquid phase portion of a reaction solution in the respective esterification reaction vessels independently of the terephthalic acid, and not less than 10% by weight of the 1,4-butanediol supplied to the esterification reaction vessels independently of the terephthalic acid is directly supplied to the liquid phase portion of the reaction solution in the respective esterification reaction vessels.

9. A process according to claim 1, comprising the steps of (1) continuously subjecting the terephthalic acid and

1,4-butanediol to esterification reaction in the presence of the titanium compound catalyst in the esterification reaction vessels; (2) condensing the 1,4-butanediol distilled off from the esterification reaction vessels; and (3) re-circulating the condensed 1,4-butanediol to the esterification reaction vessels independently of the terephthalic acid, wherein said process further comprises the steps of (4) directly supplying not less than 10% by weight of the titanium compound catalyst used in the esterification reaction to the liquid phase portion of the reaction solution in the respective esterification reaction vessels independently of the terephthalic acid; and (5) directly supplying not less than 10% by weight of the 1,4-butanediol re-circulated to the esterification reaction vessels to the liquid phase portion of the reaction solution in the respective esterification reaction vessels.

10. A process according to claim 1, wherein the titanium compound catalyst is supplied in the form of a 1,4-butanediol solution containing 0.01 to 20% by weight of the titanium compound catalyst.

11. A process according to claim 10, wherein the 1,4-butanediol solution of the titanium compound catalyst has a water concentration of 0.05 to 1.0% by weight.

12. A process according to claim 1, wherein a reaction temperature used in the esterification reaction is not less than a boiling point of the 1,4-butanediol as measured under the reaction pressure (P).

13. A process according to claim 1, wherein the titanium compound catalyst used in the esterification reaction is mixed with the 1,4-butanediol re-circulated to the esterification reaction vessels, and the resultant mixture is supplied to the esterification reaction vessels.

14. A process according to claim 1, wherein the 1,4-butanediol supplied independent of the terephthalic acid has a temperature of 150 to 190°C.

15. A process according to claim 1, wherein one esterification reaction vessel in one stage is used in the esterification reaction system.